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1. (Currently Amended) A process for the thermal decarboxylation of dicarboxylic acids 3,4-ethylenedioxythiophene-2,5-dicarboxylic acid as starting material, comprising:
reacting the starting material as a solid and, optionally, the reaction is carried out in the presence of a plurality of fluidized-bed bodies, and wherein the reaction is carried out in the absence of solvents, and
discharging the decarboxylation product formed in the reaction from the reaction zone in gaseous form.
2. (Previously Presented) The process as claimed in claim 1, wherein the decarboxylation is carried out at a temperature of from 100 to 600°C.
3. (Previously Presented) The process according to claim 1, wherein the process is carried out continuously in a bubble-forming, turbulent, jet-permeated fluidized bed or in an internally or externally circulating fluidized bed.
4. (Currently Amended) The process as claimed in claim[[s]] 1 wherein the reaction is carried out in the presence of an inert auxiliary gas selected from the group consisting of noble gases, nitrogen, water vapor, carbon monoxide, carbon dioxide and mixtures thereof.
5. (Previously Presented) The process as claimed in claim 1 wherein the reaction is carried out in a fluidized-bed reactor in which fluidized bed bodies having a mean diameter (number average) greater than the particle diameter of the dicarboxylic acid.
6. (Previously Presented) The process according to claim 5, wherein the fluidized bed bodies have a solids density ρ_s of $0.5 \text{ g}\cdot\text{cm}^{-3} < \rho_s < 6 \text{ g}\cdot\text{cm}^{-3}$.
7. (Previously Presented) The process according to claim 1 wherein the fluidized bed bodies are used as heat transfer media wherein the fluidized bed bodies are preheated outside the reaction zone and circulated through the reaction zone and comprise a catalytically active material.

8. (Previously Presented) The process according to claim 7, wherein the catalytically active material of the fluidized bed bodies comprises copper or a copper salt.
9. (Previously Presented) The process according to claims 1 wherein any solid carried out from the reaction zone by the gas stream is separated off from the product by means of a cyclone and/or filter.
10. (Previously Presented) The process according to claims 1 wherein the unreacted solid starting material separated off from the product gas steam is recirculated batchwise or continuously to the reaction zone.
11. Cancelled
12. (Previously Presented) The process according to claim 8 wherein the catalytically active material of the comprises CuCO_3 .